

Africana chabaudi n. sp. (Nematoda, Heterakidae)
in a Brazilian Iguana

by Michael R. BAKER

Abstract. — *Africana chabaudi* n. sp. (Spinicaudinae), parasitic in a Brazilian Iguana, is distinguished from all other species in the genus by the distribution and size of the caudal papillae and the length and shape of the spicules in males. This is the first report of an *Africana* from America. Five other species are known from reptiles and amphibians of sub-Saharan Africa. This distribution may be explained either as the result of the isolation of South America from Africa by continental drift starting during the Cretaceous, or as an early Tertiary dispersal across the narrow proto-Atlantic ocean.

Résumé. — *Africana chabaudi* n. sp. (Nematoda, Heterakidae), parasite d'un Iguane brésilien. — *Africana chabaudi* n. sp. se distingue des autres espèces du genre par les papilles caudales et par la longueur et la morphologie des spicules. *A. chabaudi* est le premier représentant d'*Africana* trouvé en Amérique. Cinq autres espèces sont connues chez les reptiles et amphibiens de l'Afrique au sud de la zone du Sahel. Cette distribution géographique peut s'expliquer soit par l'isolement dû à la dérive des continents depuis le Crétacé, soit par une dispersion au-delà d'un étroit océan proto-Atlantique pendant le Tertiaire inférieur.

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The description herein of a new species of *Africana* from an Iguana of Brazil is the first report of this genus outside of Africa.

Africana chabaudi n. sp.

TYPE SPECIMENS : MNHN 6CA (♂ holotype, ♀ allotype, 3 ♀ and 3 ♂ paratypes).

HOST : *Uranoscodon superciliosa* (L., 1758) (Iguanidae).

LOCATION : Intestine.

LOCALITY : Belem, Brazil.

DESCRIPTION

(figs. 1-2)

Heterakoidea, Heterakidae, Spinicaudinae, *Africana* Travassos, 1920. Cephalic end with three large lips offset from body by slight constriction. Cuticle of inner anterior edge

of each lip forming slender flange projecting anteriorly. Six minute inner labial cephalic papillae present. Dorsal lip with two large double outer papillae; subventral lips each with large ventral double papilla, small sublateral papilla and large amphids. Anterior extremity of oesophagus forming three massive tooth-like protuberances with three minute oesophageal teeth located at their base. Oesophagus with distinct anterior pharyngeal portion, elongate corpus not differentiated in diameter from a short isthmus, and a conspicuous bulb with valves. Narrow lateral alae present in both sexes, extending from just behind cephalic end to mid-region of tail in females and to point about 600 μm anterior to anus in males. Excretory pore small, giving rise to thick-walled vesicle from which arise two narrow, posteriorly directed lateral canals.

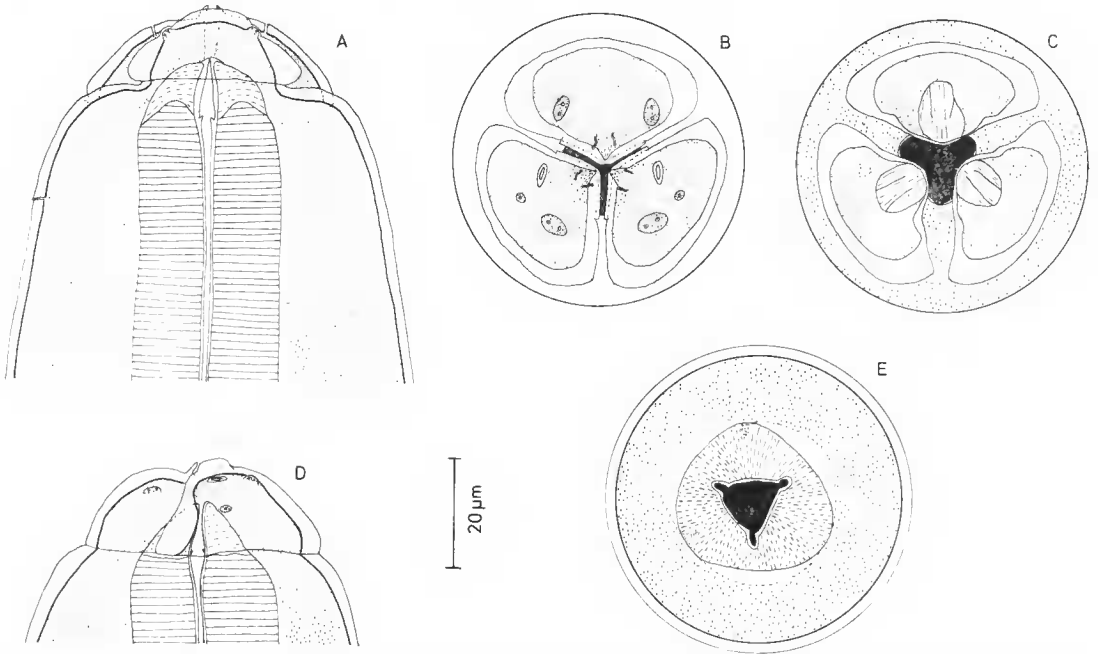


FIG. 1. — *Africana chabaudi* n. sp.; A, B, male, cephalic extremity, dorsal and apical view; C, *idem*, optical section through buccal cavity; D, *idem*, lateral view; E, *idem*, section through anterior end of oesophagus.

Male (holotype)

Tail conical, sharply pointed. Caudal end with prominent inflated caudal alae extending on each subventral surface for about 200 μm anterior and 150 μm posterior to anus. Alae supported by large pair of papillae at level of anus. Posterior half of tail with three pairs of small papillae and minute phasmids. Anal region with three pairs of small papillae. Caudal sucker approximately 50 μm wide with one small papilla within cuticular ring surrounding sucker. Three pairs of large papillae near caudal sucker. One or more of these papillae may be lacking (see fig. 2B) and they vary in position. Subventral surface

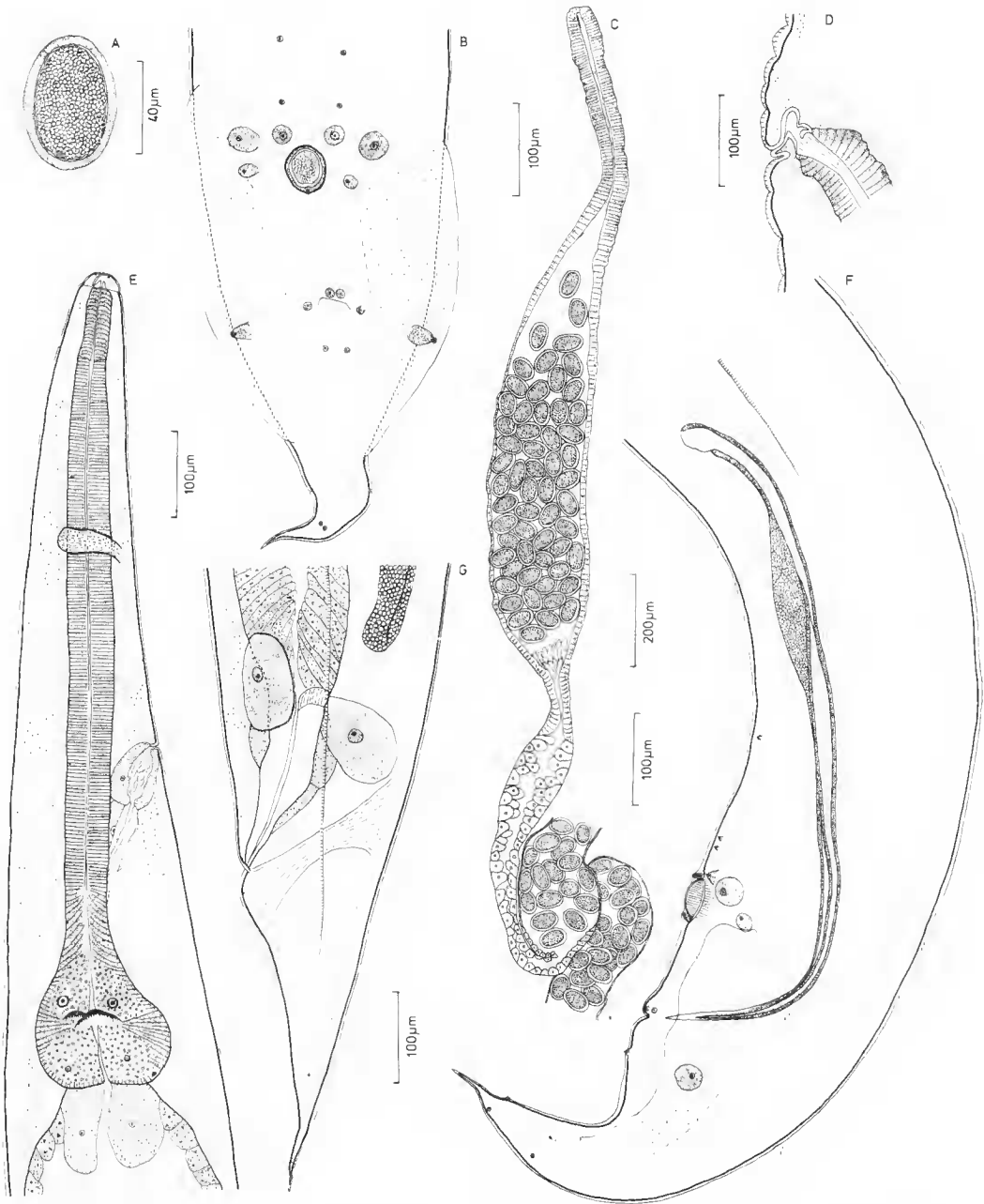


FIG. 2. — *Africana chabaudi* n. sp. ; A, egg from vagina ; B, male, caudal end, ventral view ; C, vagina, ventral view ; D, vulva, lateral view ; E, male, anterior end, lateral view ; F, male, caudal end, lateral view ; G, female, tail, lateral view.

anterior to sucker with three small pairs of papillae. Spicules with blunt capitulum and finely pointed distal end ; anterior third of shaft with prominent ventral ala-like projection.

Female (allotype)

Vulva opening into cavity formed by infolding of body wall. Cuticle of body in region of vulva forming prominent ridges extending about 200 μm around vulva. Vagina 1.3 mm long, extending posteriorly, anterior two-thirds with muscular walls and forming sac-like reservoir containing numerous eggs, posterior third with glandular walls. Two uteri present, one directed anteriorly, one posteriorly. Ovary of anterior uterus located anterior to vulva, ovary of posterior uterus located posterior to vulva. Eggs in vagina about 60 μm long and 40 μm wide, with thick shells and at gastrula stage of development. Tail conical and sharply pointed.

Dimensions

Holotype male : total length 6.8 mm ; œsophagus 1 238 μm long ; nerve ring 381 μm , excretory pore 706 μm from anterior extremity ; spicules 806 μm and tail 344 μm long. — *Allotype female* : total length 7.9 mm ; œsophagus 1 169 μm long ; nerve ring 444 μm , excretory pore 612 μm , and vulva 3.5 mm from anterior extremity ; tail 362 μm long. — *Paratype male* : total length 5.2 mm ; œsophagus 900-1 081 μm long ; nerve ring 344-412 μm , excretory pore 556-631 μm from anterior extremity ; spicules 644-869 μm and tail 287-331 μm long. — *Paratype female* : total length 8.0-9.5 mm ; œsophagus 1 244-1 463 μm long ; nerve ring 344-444 μm , excretory pore 581-787 μm , and vulva 3.7-4.1 mm from anterior extremity ; tail 319-403 μm long.

COMMENTS

Africana chabaudi n. sp. is distinguished from all other species in the genus by the distribution and size of the caudal papillae in males and by the size and shape of the spicules. *A. taylora* Fitzsimmons, 1961, *A. aculiceps* (Geddoelst, 1916) and *A. brodeni* (Geddoelst, 1916) have spicules exceeding 1.5 mm in length whereas those in *A. chabaudi* are less than 900 μm in length. *A. africana* Gendre, 1909, has spicules which are 1.0 mm or longer, markedly slender, and lacking an ala-like structure on the shaft. In *A. chabaudi*, however, the spicules are relatively more robust and there is a prominent ala-like extension off the ventral side of the anterior third of the shaft. The length and shape of the spicules in *A. astylosterni* Sandground, 1933, are not known, but this species is easily distinguished from *A. chabaudi* by the presence of four prominent pairs of caudal papillae between the anterior lip of the anus and the sucker (only two pairs in *A. chabaudi*). In addition, whereas there is a small unpaired papilla associated with the posterior wall of the sucker in *A. chabaudi*, apparently in *A. astylosternus* there is a pair of papillae.

A. chabaudi n. sp. is named in honor of Dr. A. G. CHABAUD, Muséum national d'Histoire naturelle.

DISTRIBUTION

The presence of a species of *Africana* in eastern Brazil is of biogeographical interest since this genus was hitherto considered to be restricted to sub-Saharan Africa. The five

African species have been reported in a wide variety of reptiles and amphibians : Bufonidae (TAYLOR, 1924), Ranidae (SANDGROUND, 1933), Testudinidae (GENDRE, 1909; FITZSIMMONS, 1961), Varanidae (GENDRE, 1911), Chamaeleonidae (RASHEED, 1965; GEDOELST, 1916; BAYLIS, 1937), Scincidae (TAYLOR, 1924). The host for the South American species belongs to a family of lizards (Iguanidae) restricted in distribution to the New World, Galapagos, Fiji and Madagascar. However, iguanas are classified together with Chamaeleonidae and Agamidae in the Infra-Order Iguania which thus provides hosts for four of the six species of *Africana*. The palaeontological record for the Iguania does not extend with certainty before the Oligocene, although it is believed they must be Cretaceous in age (GINSBURG, 1970).

The present distribution of *Africana* may be interpreted as the result of the Cretaceous isolation of Africa from South America by continental drift. However, as TERMIER & TERMIER (1980) and others have shown there has been some exchange of faunas between Africa and South America in the early Tertiary across a presumably narrow proto-Atlantic ocean. The presence of *Africana* in Africa and Brazil today may be an example of this late exchange. The distribution of the related Spinicaudinae genus *Moaciria* is particularly suggestive of this possibility. In the Old World seven species of *Moaciria* occur widely in Australia and associated islands to the north, Madagascar and North Africa. In the New World the genus is represented by a single species in a skink from the island Fernando de Noronha which is located 350 km from the extreme eastern shore of continental Brazil (FREITAS, 1956). At this locality the Atlantic ocean is believed to have been at its narrowest throughout its long history.

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